A SYSTEMATIC STUDY OF THE MAIN ARTERIES IN THE REGION OF THE HEART. AVES XIII.

CICONIIFORMES, PART 2[1]

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Further studies on the arrangement-pattern of the main arteries in the neck and thorax of 19 species of Ciconiiformes reveals the presence of a basic ordinal arrangement of these vessels, and further substantiates the view of Glenny (1945) that there are notable steps in the evolution of the carotids from a bicarotid to unicarotid condition. As has been shown by Garrod (1873) and Glenny (1945), union of the carotid (trunk) arteries results in the conjugate condition. Subsequent reduction of the basal portion of either side (usually the left side in the Ciconiiformes) may lead to complete loss of the reduced vessel.

It may be noted that there is not any notable uniformity in occurrence of these reductions with respect to generic status at the present time. As a result, bicarotid and conjugate carotids may occur in different species of a single genus. Furthermore, these variations may occur in the several families and subfamilies since they are not restricted to any single grouping of genera.

The characteristic ordinal arrangement-pattern for the Ciconiiformes is as follows; bicarotidinae-normales (with variations); ligamentum aortae present; ligamentum botalli reduced or lacking; branches of subclavian artery: coracoid or sterno-clavicular, axillary, internal mammary or intercostal, two pectorals; branches of the common carotid: ductus shawi and tracheal, thyroid, superficial cervical (comes nervi vagi), vertebral, internal carotid (trunk).

The following species have been studied, and differences in the arrangement-pattern noted. Unless otherwise noted, the following species present the pattern characteristic of the order.

ARDEIDAE:

Ardea herodias treganzai Court: conjugate carotids, ligamentum botalli present but reduced.

Ardea herodias herodias (Linnaeus): bicarotid, ligamentum botalli present.

Butorides virescens virescens (Linnaeus): conjugate carotids, ligamentum botalli lacking.

Butorides sundevalli Reichenow: bicarotid, ligamentum botalli lacking.

Florida caerulea (Linnaeus): bicarotid, no ligamentum botalli.

Ardeola speciosa (Horsfield): conjugate carotids, left side reduced to about ⅓ that of the right side, no ligamentum botalli.

Bubulcus ibis coromandus (Boddaert): bicarotid, ligamentum botalli much reduced and partial.

Bubulcus ibis ibis (Linnaeus): same as above.

Dichromanassa rufescens rufescens (Gmelin): same as above.

Casmerodius albus albus (Linnaeus): same as above.

Demiegretta sacra (Gmelin): same as above, small ventro-lateral superficial cervicals also arise from base common to thyroids.

Leucophoyx thula brewsteri (Thayer & Bangs): conjugate carotids, ligamentum botalli absent.

Hydranassa tricolor ruficollis (Gosse): bicarotid, ligamentum reduced or fused to radix aortae.

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Nyctanassa violacea pauper (Sclater & Salvin): bicarotid, ligamentum botalli reduced to a white linea botalli on the face of the right radix aortae.

Ixobrychus minutus minutus (Linnaeus): bicarotid, ligamentum botalli present.

Ixobrychus sinensis bryani (Seale): bicarotid, ligamentum botalli absent.

Botaurus lentiginosus (Montagu): conjugate carotids, ligamentum botalli lacking.

COCHLEARIIDAE:

Cochlearius cochlaerius zeledoni (Ridgway): bicarotid, linea botalli present.

THRESKIORNITHIDAE:

Guara alba (Linnaeus): bicarotid, ligamentum botalli short.

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